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CHEMICAL UTILIZATION OF CO_2 for GRID-SCALE ENERGY STORAGE: A PROPECTIVE SCENARIO OF CHINA AND GLOBAL ENERGY CONNECTION

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Utilizing carbon dioxide (CO_2) sequestered from large point sources to produce fuels and chemicals has been proposed as an energy carrier of storing intermittent renewable energy. The integrated technology is Power to Gas (PtG), or Power to Liquid (PtL) process. In the scenario of very-high installed renewable energy source (RES>80%) or curtailed wind/solar energy, the RES+PtG/ PtL will play an important role of energy transition while fossil fuels are phased out. The study reviews and assesses the technology development, economic feasibility, system impact and future outlook in prospective of grid-scale analysis and global energy interconnection.